| Notice of Allowability | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/823,581 | CHEN ET AL. | |
| | Examiner | Art Unit | |
| | Scott L. Jarrett | 3623 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--*

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *1/12/2007*.

2. ☒ The allowed claim(s) is/are *22-30*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE**.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   **Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

C. MICHELLE TARAE
PRIMARY EXAMINER

## EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Philip S. Lyren (Reg No. 40,709) on March 27, 2006.

### *Amendments to the Specification*

Please amend the title as follows:

A Peer-to-Peer Inter-Enterprise Collaborative Process Management Method and System

***Amendments to the Claims***

This listing of claims will replace all prior versions, and listings, of the claims:

1. – 21. (canceled)

22. (new) A method for managing peer-to-peer collaborative inter-enterprise business processes between two different enterprises having first and second collaborative process managers (CPM) comprising:

defining a collaborative business process (CBP) specified by a collaborative process definition (CPD) and based on a collaboration protocol, the CPD comprising:

(1) a list of participating process-roles for first and second peer process instances,

(2) plural work nodes each having an activity to be completed and a task role that matches one of the defined process-roles and private sub-processes unavailable to other peer process instances, and

(3) templates having definitions, initial values and sharing scope, being specified as public or private, of process data objects, the templates being either public and sharable by all process roles and peer process instances or private and sharable by only peer instances having a specified process-role;

performing the CBP by instantiating and executing first and second peer process instances of the CBP by the CPMs to form a single logical execution instance of the CBP identified by a unique cooperation key assigned to the peer process instances each having a role and being responsible only for the work nodes having a role matching the role of the peer process instance;

wherein the CPMs' schedule, dispatch and control work nodes and include a private sub-process manager and an out-of-order handler mechanism that halts execution when messages from other CPMs are received out-of-order;

launching activities of the work nodes by exchanging process data having the templates that specify sharing scopes of the exchanged data objects and updating the templates and sharing scope during process data exchange; and

using the cooperation key to identify a logical instance of the CBP and to correlate and synchronize via peer-to-peer information exchange between the first and second CPMs.

23. (new) The method of claim 22, wherein when message relating to execution of a collaborative process is received, the cooperation key is used to identify a correct local process instance.

24. (new) The method of claim 22, wherein process data in a private template is not sharable by all peer process instances but private to one of the first and second peer process instances.

25. (new) The method of claim 22 further comprising, specifying rules in the sharing scope for sharing both public and private data between the first and second peer process instances.

26. (new) The method of claim 22, wherein the process specific templates are accessible only by a peer process instance have a specified role.

27. (new) The method of claim 22 further comprising, maintaining at each CPM a mapping table between cooperation keys and a local process instance identifier.

28. (new) The method of claim 22 further comprising, employing a queuing technique at the out-of-order message handler to resolve out-of-order message delivery problems.

29. (new) The method of claim 22 wherein the CBP includes a plurality of tasks, the method further comprising:

the first CPM receiving a current task;

the first CPM determining if the current task is responsibility of the first CPM;

when the current task is the responsibility of the first CPM, executing the current task; and

when the current task is not the responsibility of the first CPM, not executing the current task.

30. (new) The method of claim 22 further comprising, employing task return messages for synchronizing the peer process instances and for exchanging data between the process instances; wherein each task return message includes:

a cooperation key for specifying a logical process instance;

a local handle of the process instance and task;

an activity execution status; and

a sub-packet of process data passed to a task.

## ALLOWANCE

2. Claims 22-30 are allowed.

## REASONS FOR ALLOWANCE

3. The following is an examiner's statement of reasons for allowance.

The closest prior art Advanced Decision Environment for Process Tasks (ADEPT) as taught by Norman, T.J., et al. Designing and implementing a multi-agent architecture for business process management (1996), Jennings, N.R. et al., Using Intelligent Agents to Manage Business Processes (1996), Alty, J.L. et al., Advanced Decision Environment for Process Tasks: Overview and Architecture (1994), Jennings, N.R. et al., Autonomous Agents for Business Process Management (2000); and Schulz et al., Architecting Cross-Organizational B2B Integration (2000); and Atluri et al., Enforcing Mandatory and Discretionary Security in Workflow Management Systems (1996) fail to teach or suggest either singularly or in combination defining a collaborative process definition the CPD comprises templates having definitions, initial values and sharing scope, being specified as public or private, of process data objects, the templates being either public and sharable by all process roles and peer process instances or private and sharable by only peer instances having a specified process-role, such that the peer-process instances form a single logical execution instance of the CBP identified by a unique cooperation key assigned to the peer process instances and further wherein the CPM's launch the activities of the work nodes by exchanging

process data having the templates that specify sharing scopes of the exchanged data objects and updating the templates and sharing scope during process data exchange as recited in independent Claim 22.

More specifically ADEPT Advanced Decision Environment for Process Tasks (ADEPT) teaches a system and method of collaborating process managers (agents) between a plurality of enterprises comprising: defining a collaborative business process (CBP) specified by a collaborative process definition (CPD) and based on a collaboration protocol, the CPD having a plurality of work nodes having an activity to be completed and a task role; specifying that at least one process/communication is kept private between the first and second collaborative process managers; and executing and instantiating peer instances of the collaborative process to form a single logical execution instance and which is synchronized via message exchanges.

Adept fails to teach defining templates within the CPD wherein the templates contain definitions, initial values and sharing scope, being specified as public or private, of process data objects, the templates being either public and sharable by all process roles and peer process instances or private and sharable by only peer instances having a specified process-role, such that the peer-process instances form a single logical execution instance of the CBP identified by a unique cooperation key assigned to the peer process instances or launching work node activities through exchange of process data having the templates that specify sharing scopes of the exchanged data objects

and updating the templates and sharing scope during process data exchange as recited in independent Claim 22.

Schulz et al. teach defining a sharing scope for templated and role-specific business processes, specified as public or private between the plurality of collaborative process managers.

However Schulz et al. fails to teach fail to teach or suggest defining a collaborative process definition the CPD comprises templates having definitions, initial values and sharing scope, being specified as public or private, of process data objects, the templates being either public and sharable by all process roles and peer process instances or private and sharable by only peer instances having a specified process-role, such that the peer-process instances form a single logical execution instance of the CBP identified by a unique cooperation key assigned to the peer process instances and further wherein the work node activities are launched by exchanging process data having the templates that specify sharing scopes of the exchanged data objects and updating the templates and sharing scope during process data exchange as recited in independent Claim 22.

Alturi et al. teach using templates for keeping data private between a plurality of collaborative process managers in the form role-based and/or event-based security. However Alturi et al. fails to teach or suggest defining a collaborative process definition the CPD comprises templates having definitions, initial values and sharing scope, being

specified as public or private, of process data objects, the templates being either public and sharable by all process roles and peer process instances or private and sharable by only peer instances having a specified process-role, such that the peer-process instances form a single logical execution instance of the CBP identified by a unique cooperation key assigned to the peer process instances and further wherein the work node activities are launched by exchanging process data having the templates that specify sharing scopes of the exchanged data objects and updating the templates and sharing scope during process data exchange as recited in independent Claim 22.

None of the prior art of record, taken individually or in any combination, teach, inter alia, a method for managing peer-to-peer collaborative inter-enterprise business processes between two different enterprises having first and second collaborative process managers (CPM) wherein the CPMs instantiate and execute first and second peer process instances of a collaborative business process (CBP) specified by a collaborative process definition (CPD), the CPD comprises templates having definitions, initial values and sharing scope, being specified as public or private, of process data objects, the templates being either public and sharable by all process roles and peer process instances or private and sharable by only peer instances having a specified process-role, such that the peer-process instances form a single logical execution instance of the CBP identified by a unique cooperation key assigned to the peer process instances and further wherein the CPM's launch the activities of the work nodes by exchanging process data having the templates that specify sharing scopes of the

exchanged data objects and updating the templates and sharing scope during process data exchange as recited in independent Claim 22.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Hurley et al., U.S. Patent No. 6,678,882, teach a system and method for support inter-agent communications and process/activity synchronization in a collaborative environment wherein agents exchange/transfer objects when performing activities/processes. Hurley et al. further teach that the method/system provides for protected access to shared objects and role-based security.

- Cheyer et al., U.S. Patent No. 6,691,151, teach a system and method for inter-agent communication.

- Frisco et al., U.S. Patent Publication No. 2003/0061330, teach a collaborative process management system and method wherein partnership templates include several project/process activity attributes including identifying activities as either public or private.

- Olsen et al., EP 0954799 B1, teach a system and method for managing inter-enterprise business processes.

- Ott, Conceptual Design and Implementation of a Graphical Workflow-Modeling Editor in the Context of Groupware-Databases (1994), teaches a system and method for modeling and executing inter organizational collaborative business processes (wide area workflow) wherein two or more different enterprises share a common high-level business process/workflow wherein their independent and internal processes, which

contain confidential information, are modeled as black boxes such that the collaborating partners can only see the other partners processes as an "interface node."

Ott further teaches providing several known workflow security models for access control.

- ActionWorkflow Process Builders User's Guide (1996), teaches a commercial workflow management system and method comprising collaborative business process templates having a list of the participating user/agent roles in the process, a template library and security/access control.

- Using the WFT Development Environment (1998), teaches a workflow management system and method wherein business processes are defined using workflow templates.

- Zeng et al., On Demand Business-to-Business Integration (2001), teach a agent-based collaborative inter-enterprise workflow management (business process) system and method (AgFlow) comprising XML-based process schemas (templates) and inter-agent communications.

- Graupner et al., E-Speak (2000), teaches a commercial system and method for supporting collaborative inter-enterprise business processes using a common service bus wherein enterprise services exchange documents when performing activities and services (service providers) comprising service specifications and descriptions containing service interfaces and access control policies.

- HP Process Manager (2000), teaches a commercial business process management system and method comprising defined business process definitions such

that "A defined process can remain 'private' or be exposed as an available service for immediate re-use as a sub-process within another process."

- Hung, Secure Workflow Model (2001), teaches a plurality of well known security and access control models utilized in workflow management systems.

- Sandhu et al., Role-Based Access Control Models (1996), teach the well known utilization of role-based access control models in computer systems.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott L. Jarrett whose telephone number is (571) 272-7033. The examiner can normally be reached on Monday-Friday, 8:00AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hafiz Tariq can be reached on (571) 272-6729. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Scott Jarrett
Asst. Examiner
March 27, 2007

C. MICHELLE TARAE
PRIMARY EXAMINER